Fusion3

F200 3D Printer

MAINTENANCE:
TOOLHEAD ACCESS

Revision 11/25/2025

ACCESSING THE TOOLHEAD FOR MAINTENANCE

How to access the toolhead for maintenance and repair.

INTRODUCTION

The toolhead assembly is the heart of the F200. It consists of the print head, the extruder, bed probe end effector, cooling fans, filament monitor, and the electronics to support everything.

There are 2 ways to access the toolhead for maintenance:

- **Remove the front housing.** Gives access to the print head, blower, extruder, filament monitor (more common).
- **Remove the toolboard rear panel.** Gives access to the electronics & wiring (less common).

REMOVING THE FRONT TOOLHEAD HOUSING

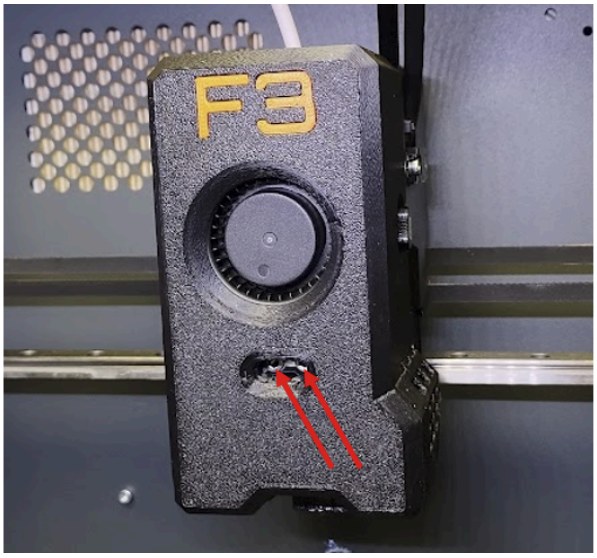
The front toolhead housing contains the blower and part cooling duct. It also retains the print head.

The print head is captured by 2 wedges; it's not bolted into place. This makes it easy to work on. When you remove the front housing, sometimes the print head drops out on its own. This is ok.

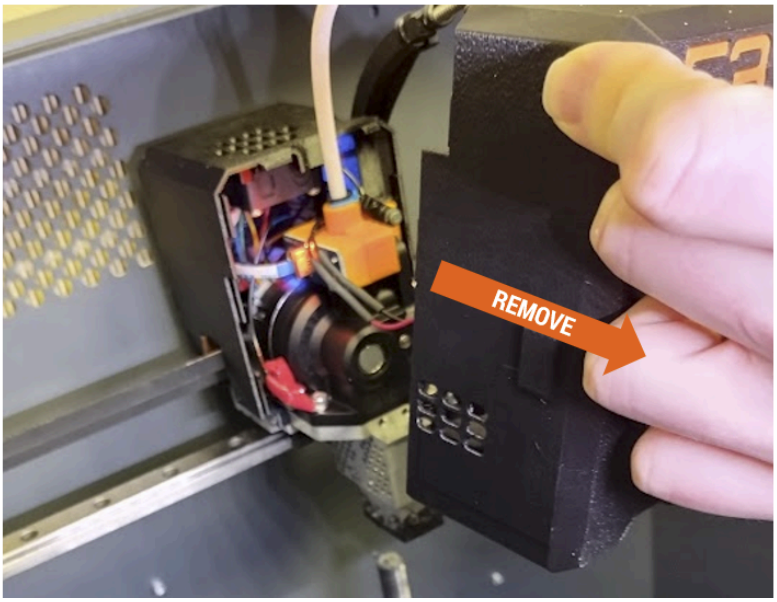
The front housing is held on with 2 screws. The screws are captive so they cannot come out and get lost.

Steps to Remove the Front Housing

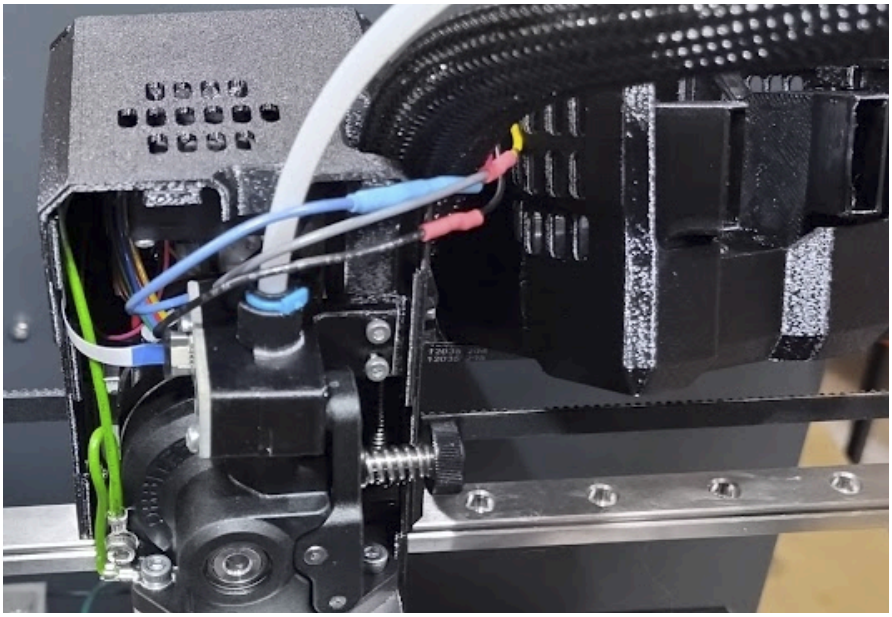
1. The print head should be <45°C.
2. Loosen the 2 screws with a 2.5mm hex drive. The screws will not come out of the housing when they're loose.



3. Grasp the sides of the housing and gently wiggle it while pulling it forward. There are a few friction-fit catches you have to disengage.

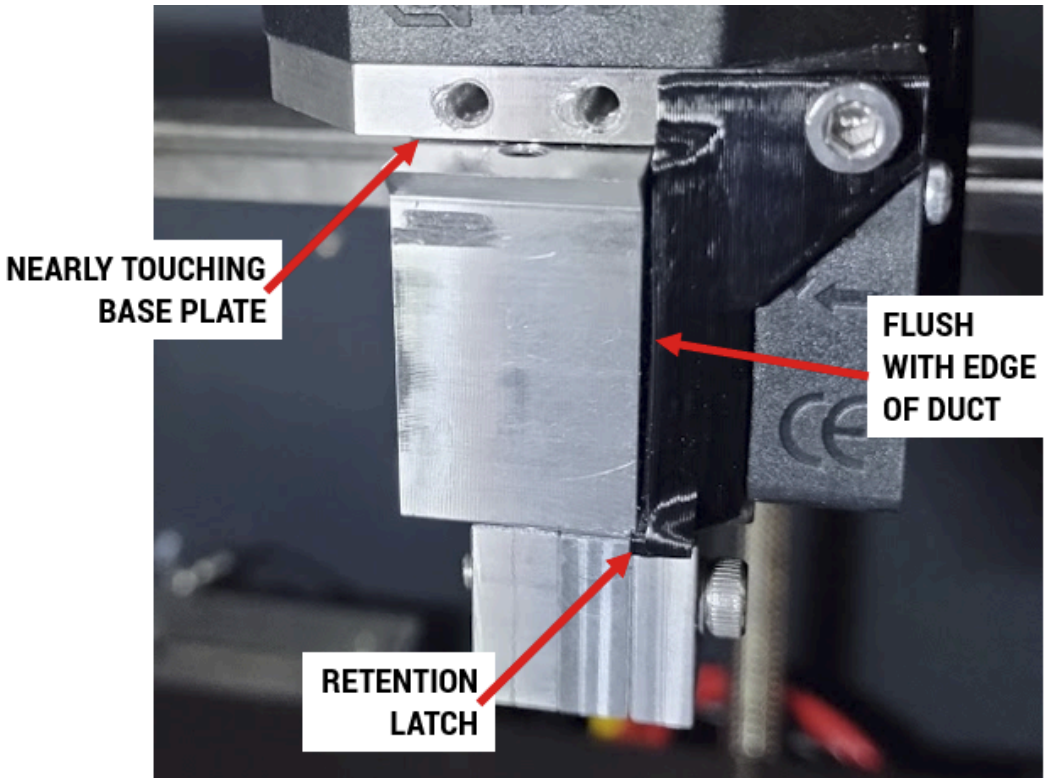


4. Due to the blower wire, the front housing won't come completely off the toolhead assembly. Set it on top of the toolhead or on the belts.



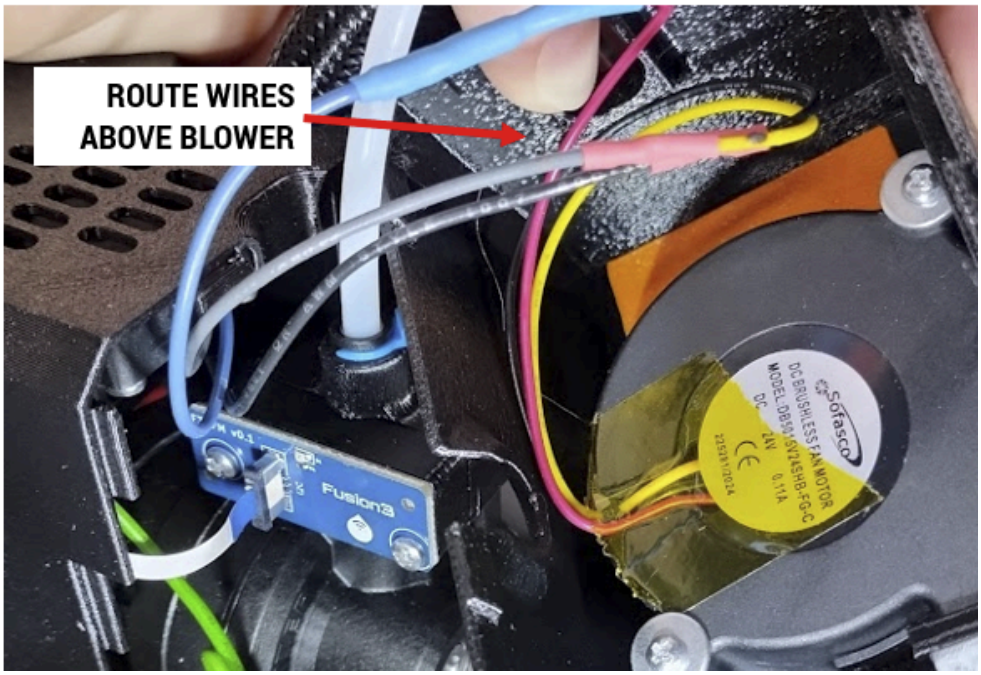
INSTALLING THE FRONT TOOLHEAD HOUSING

1. Make sure the print head is in position. There is a small friction retention tab on the corner of the cold side fan duct to help hold it in position as you install the front housing.

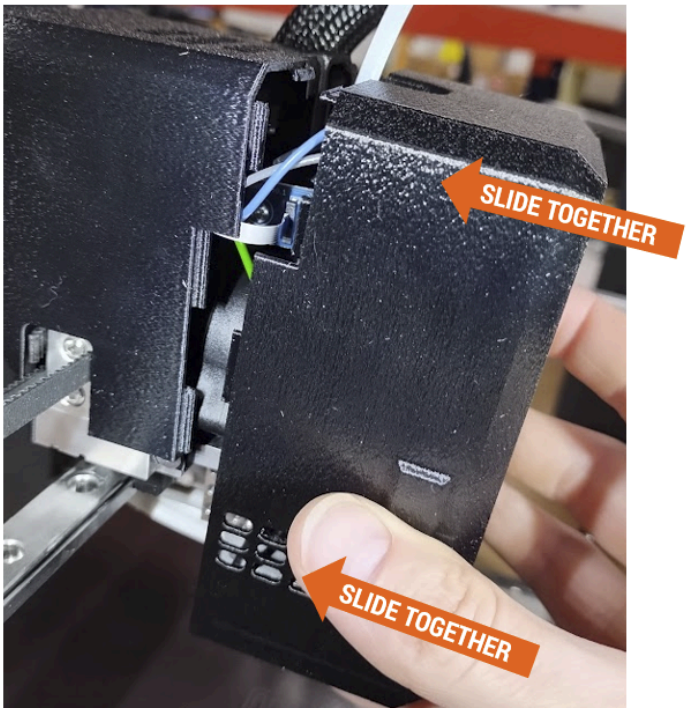


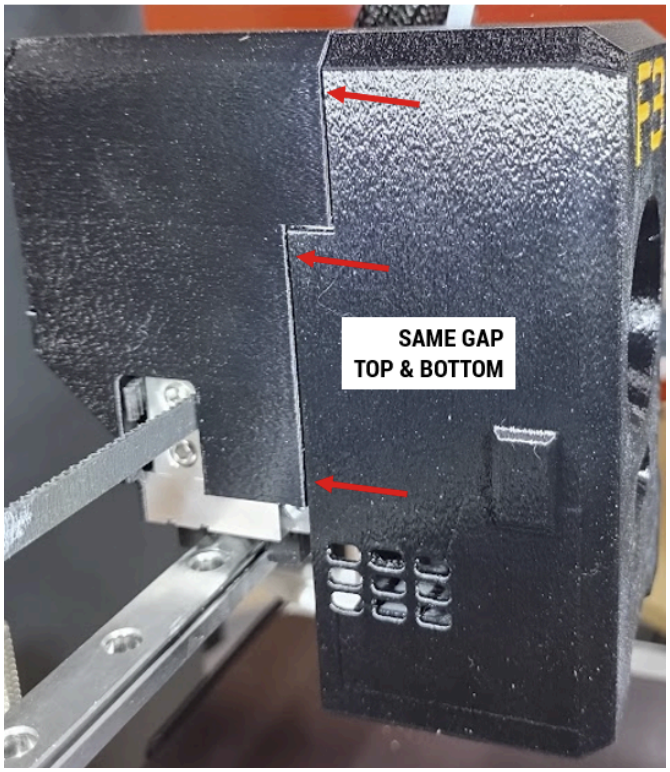
For more information on installing the print head: SEE HERE

2. Line up the front housing and slide it straight back towards the toolhead. Make sure the blower wires are not going to end up between the blower and the filament monitor (low clearance in this area).

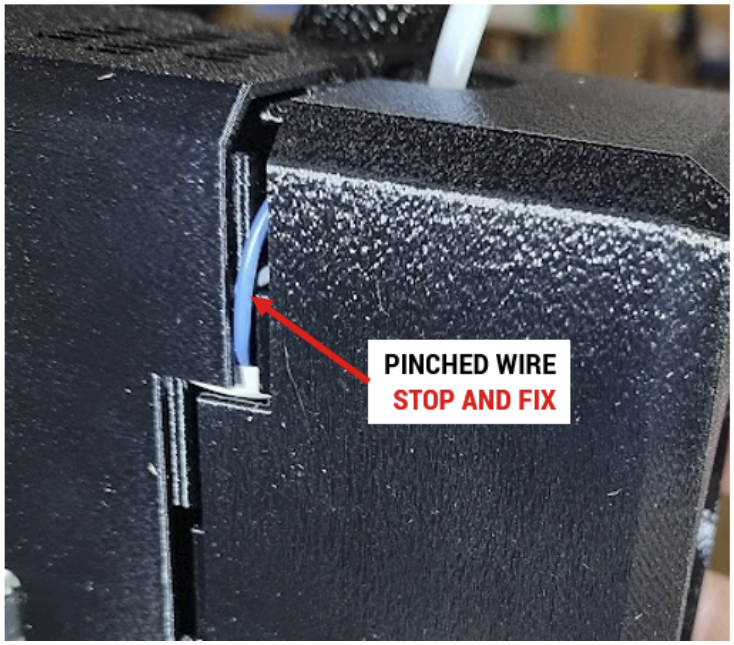


3. As the alignment tabs engage you will feel friction. Continue to gently push until the housing is mated to the main section all the way around.





4. If you encounter high resistance or the housings won't fully come together, **STOP**. Slide the front housing off and check for interference (wire, print head out of position, etc).

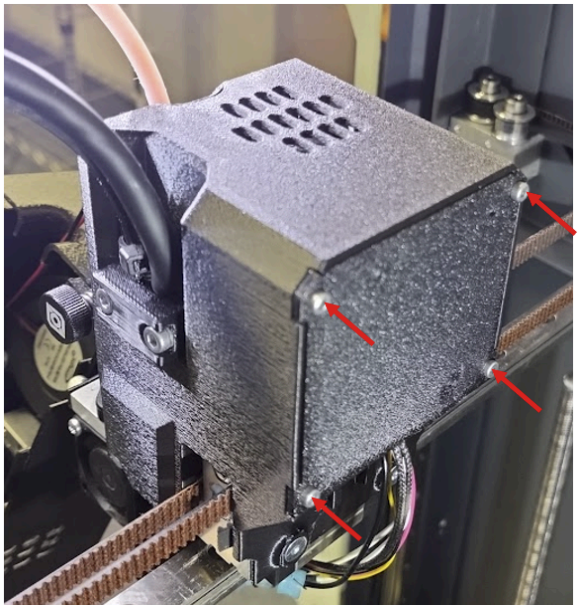


5. Once the housings are fully together, tighten the 2 front screws. Finger tight + ¼ turn.

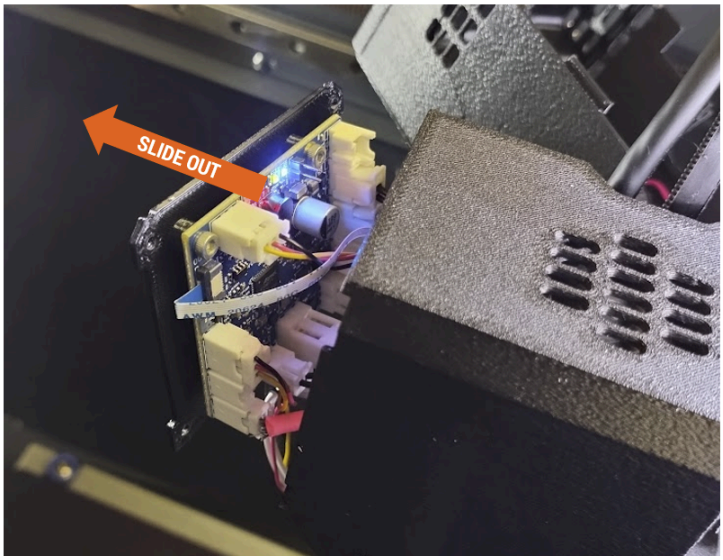
REMOVING THE TOOLBOARD REAR PANEL

F200 uses a distributed electronics architecture with a dedicated control board mounted in the toolhead assembly, called the toolboard. In order to fully remove or service many items on the toolhead it's necessary to disconnect their wires from this toolboard.

1. Use a 1.5mm hex drive to remove the 4 screws holding the rear cover onto the toolhead assembly (these screws are not captive).

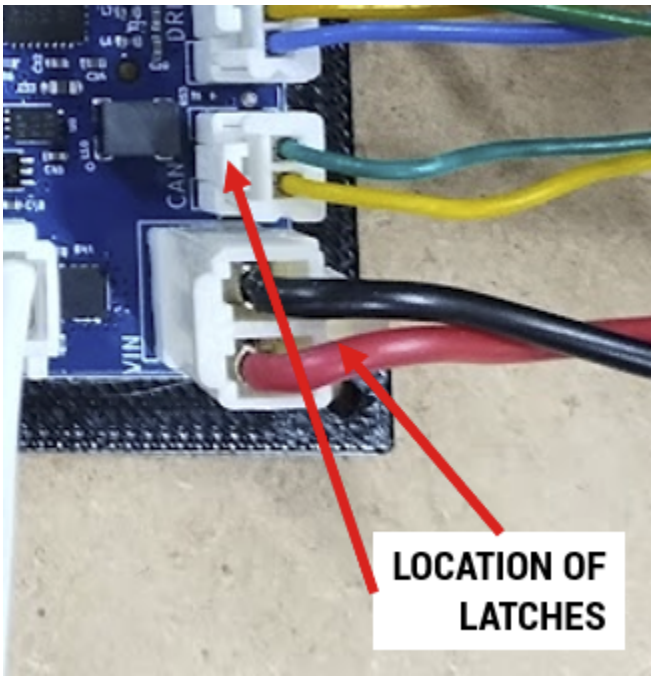


2. Gently pull the rear cover and toolboard back away from the toolhead assembly. The wires have enough service loop to get the toolboard about 2cm away, which is enough space to access the wiring.



Servicing Toolboard Wiring

All the connectors on the toolboard have positive retention latches. These latches are positioned on the inside face of the connectors, except for the 2 big connectors, where it's on the outside face. To remove the wire, you have to release the latch.

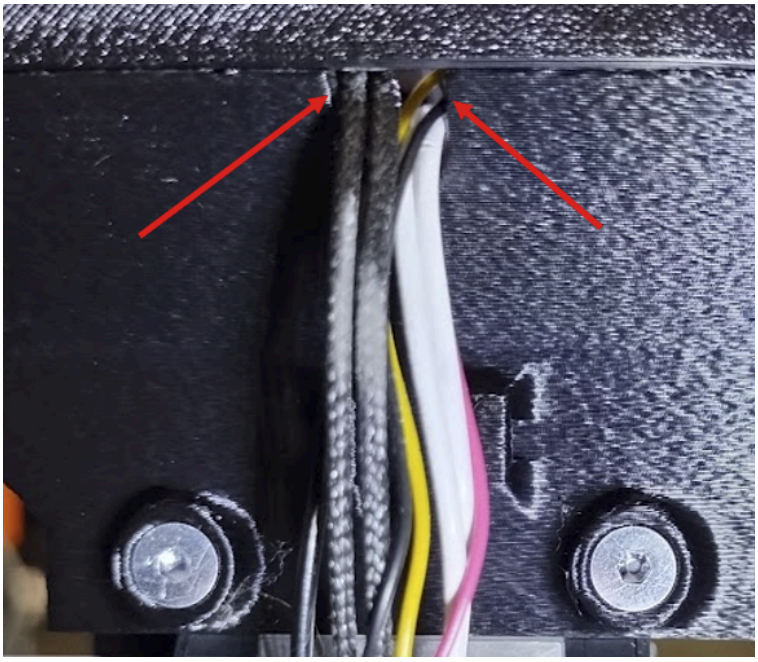


The toolboard wires are relatively small and fragile. Only remove the wires by manipulating the connector body, NOT the wires themselves.

Toolboard pinout is HERE

INSTALLING THE TOOLBOARD REAR PANEL

1. Make sure all wiring is reconnected properly. For more information see:
    a. Toolboard pinout HERE
    b. Instructions for manipulating the filament monitor ribbon cable HERE
2. Gently move the toolboard cover towards the toolhead assembly. Monitor the wiring to make sure nothing is kinked. For the wires that exit through the slot below the toolboard, make sure none of them get caught outside of the slot.



3. Install the 4 screws. Finger tight + ¼ turn.